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ENTOMOLOGICAL NEWS

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On the Genus Macrocrates, with Notes on Other Stagbeetles (Coleoptera: Lucanidae)

BY BERNARD BENESH, Burrville, Tennessee

In the "Monographia dos Lucanideos Brasileiros," Luederwaldt (1935) records three species in the genus *Macrocrates* Burmeister, *bucephalus* (Hope et Westw.) (1845), *formosus* Didier (1926) and *australis* Lued. (1934), the description of the last species based on two examples, a male and female, ex-collection J. P. Schmalz, in Museu Paulista, Sao Paulo, Brazil.

It will not be amiss to record here some pertinent data on the Schmalz collection, referred to above. The late J. P. Schmalz, Joinville, Brazil, at one time governor of the State of Santa Catharina, assembled during his life-time one of the largest privately owned collections of neotropical insects, chiefly Coleoptera and Lepidoptera, especially rich in Brazilian representation of the two orders. After the demise of J. P. Schmalz, the collection was brought by his nephew Albano Schmalz to the United States, for exhibition and eventual disposal to some institution of learning. Unfortunately the collection, while in transit for exhibition at Alva, Oklahoma, met an untimely and inglorious end, being entirely destroyed by fire.

It was my sad task to evaluate the loss, which duty enabled me to examine pertinent records, transcribing those pertaining to Lucanidæ, chiefly concerning acquisitions, habits and collecting experiences from 1889 to 1913.

Among the records appears the following interesting memorandum: "2619. *Macrocrates bucephalus.* Hirschkäfer, schwarz

matt, Caput und Mandibeln rötlich braun. Ende März 1902 viele auf der Höhe der Serra do Ikerim, 1.300 Meter. Als *Macrocrates bucephalus* durch C. Felsche determ. Nach Burmeister und der Abbildung in Heynes Ex. K. in W. u. Bild [1] stimmt die Bestimmung jedoch nicht. Am 31 März 1903 fingen Rudolf, Carl und Adalbert, an der gleichen Oertlichkeit, 17 ♂♂ u. 3 ♀♀, und April 1904 wieder 12 ♂♂ u. nur 1 ♀ an derselb. Oertlichkeit."

From the preceding will be noted that the beetles are not uncommon, and that the "many" taken in 1902 and 29 ♂♂ and 4 ♀♀ in 1903 and 1904 were submitted to Carl Felsche for identification, who declared the insects to be *M. bucephalus;* he retained many duplicates, of course, of which the major part apparently went into the collection of Henri Boileau.

Evidently Albano Schmalz presented a pair of the beetles to the Museu Paulista before his departure from Brazil, from which Luederwaldt (1934) had drawn his description of *M. australis,* thus conclusively proving the insect's indicated misidentification; subsequently (1935) he published a photographic reproduction of both sexes of the species.

As mentioned previously, Boileau must have secured a good share of Felsche's specimens, Dr. Didier [2] recording 11 examples (8 ♂, 3 ♀) as *M. bucephalus* in the Boileau collection, now actually Didier's. A male, of maximum development, is figured by Didier (1933) and a good series of five males and a female is figured by Didier and Seguy (1953); in both instances Felsche's designation was used.

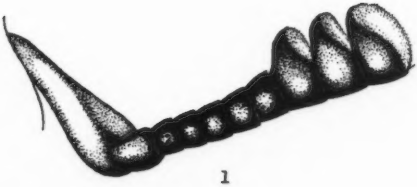
A careful comparison of the figures and examination of specimens establishes the fact that *M. australis* Lued. and *bucephalus* Didier (1933), not Hope and Westwood 1845, are conspecific, compelling us to consign *M. bucephalus* Didier into synonymy.

[1] Heyne, Alexander und Otto Taschenberg: Die exotischen Käfer in Wort und Bild. Esslingen, 1908, 4to, 319 pp., 40 col. plates.

[2] Didier, R.: Études sur les Coléoptères Lucanides du Globe, fascicule 1, 1928, p. 22.

Nagelius passaliformis (Benesh) ♀. Figures 1–4.

1. Antenna. 2. Maxilla. 3. Labium. 4. Genitalia.
s = styli c = coxites v = valvifers

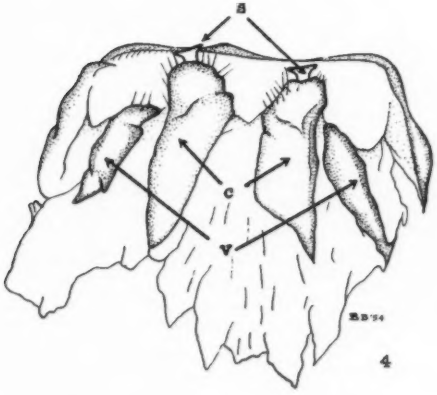


1

2

3

1 mm



4

While examples of *M. bucephalus* (Hope et Westw.) (1845) were not available to him, Luederwaldt diagnosed the species by utilizing Burmeister's description of the male, and Dohrn's of the female, illustrating the "Monographia" by a figure, previously used by Parry (1864).[3] This figure is misleading, in that the apical dentition of the mandibles is not precisely depicted, and the lateral angulation of the pronotum is grossly exaggerated; this inaccuracy accounts for Luederwaldt's straying and induced him to record *bucephalus* (Hope et Westw.) and *formosus* Didier as distinct species, when in fact they are conspecific and the latter an absolute synonym.

The two species should be catalogued as follows:[4]

australis Lued., Rev. de Ent. IV, 1934, p. 388; Rev. Mus. Paul. XIX, 1935, p. 510, tab. 2, fig. 15 ♀, 19 ♂, tab. 4, fig. 68.

bucephala Didier, La Terre et la Vie III, 1933, p. 25, fig. ♂, nec Hope et Westw., 1845.—Heyne et Taschbg., Exot. Käfer, 1908, p. 54, tab. 8, fig. 39 ♂.—Didier et Seguy, Encycl. Ent., A, XXVIII, 1953, tab. 94, figs. 1–5 ♂, 6 ♀. Hab.—Southern Brazil: Serra do Ikerim.

bucephala (Hope et Westw.), Cat. Lucan. Coleop. 1845, p. 15, ♂, *Lucanus*.—Burm., Handb. d. Ent. V, 1847, p. 382.—Dohrn, Stett. Ent. Ztg. XXIII, 1862, p. 155, ♀.—Parry, Trans. Ent. Soc. Lond. (3) II, 1864, p. 44, tab. 10, fig. 9 ♂.—Lued., Rev. Mus. Paul. XIX, 1935, p. 509, tab. 3, fig. 39 ♂.

nigripes (Dej.), Cat., ed. III, 1837, p. 194, *Psalicerus*.—Boil., Trans. Ent. Soc. Lond. 1913, p. 237.

longicornis Burm., nom. nud., Parry, loc. cit. (3) II, 1864, p. 86.

rotundicollis Gory, nom. nud., Boil., loc. cit. 1913, p. 237.

formosa Didier, Bull. Soc. Ent. Fr. 1926, p. 83, fig. ♂.—Lued., Rev. Mus. Paul. XIX, 1935, p. 513, tab. 3, fig. 38 ♂. Hab.—Northern Brazil (teste: Luederwaldt, 1935).

Nigidius passaliformis Benesh

Ever since the acquisition of specimens of *Nigidius* (*Eudora*) *madagascariensis* (Cast.), which species was unknown to me in

[3] Not recorded by VAN ROON in Coleopterorum Catalogus, Pars Lucanidæ, 1910.

[4] According to BLACKWELDER (1944), the generic name *Macrocrates* is of feminine gender requiring alteration of specific names.

nature, I have been doubtful of the sexual designation of *N. passaliformis* Benesh, described in Psyche [5] several years ago. In examining the female *madagascariensis,* I so readily perceived its close affinity to *passaliformis* that I began to wonder whether my designation of the *passaliformis* type as male was correct. To satisfy my doubts, and rectify if necessary the probable error, I had applied for permission to dissect and examine the genitalia of the type, which privilege, it is needless to say, was graciously granted.

I am deeply obligated to Dr. P. J. Darlington, Jr., Curator of Coleoptera, Museum of Comparative Zoology, Harvard College, Cambridge, Massachusetts, for permission to dissect, examine and report on the sex of the type of *Nigidius passaliformis* Benesh, and to Monsieur Melchior de Lisle, director of public works, Douala, Cameroon, for specimens of *Nigidius* (*Eudora*) *madagascariensis* (Cast.) used for comparison; to both my heartiest thanks.

The examination of the genitalia of *N. passaliformis* (fig. 4) proves, beyond the shadow of a doubt, that I had erred in designating from external appearances the type as male, having been misled by the large mandibles, as long, if not longer (the apices are broken off), than the head. I am now fully convinced that when the still unknown male is discovered, it will closely approximate to *madagascariensis.*

As belonging to FIGULINÆ, both sexes have the inner maxillary lobe (lacina) (fig. 2) hooked or uncinnate; figures 2 and 3 depict the buccal appendages, maxilla, and labium respectively, and as will be readily perceived, both are somewhat damaged, deterring us from presenting a complete description. The antenna (fig. 1) is typically figuline, short and stout, with scape, funicle and clava glabrous, clava 3-jointed, flattened, with spongiose sensory area confined to anterior face of the segments.

According to Burmeister (1847), the members of FIGULINÆ have "maxillarum mando utriusque sexus corneus uncatus," a character subsequently utilized by Westwood (1855), but ridi-

[5] BENESH, B.: Descriptions of some new exotic species of Stag-beetles. Psyche, L, 1943, p. 37–48, pl. 4, figs. 1–7.

culed by Lacordaire (1856), who declared it an "insignificant pecularity." The character is in use today, although sporadically or entirely disregarded, in addition to readily discernible external characters. Another hitherto unrecorded character, utilized by the writer in separation of major groups, such as tribes and subfamilies, is the female genitalia, which may be either simple or bearing styli (fig. 4); the character, being constant, is a better criterion for sectional characters than the antennae, mandibles, striation of elytra, or spination of the tibiae, the last of doubtful value, as it may vary in the same species, depending on individual development.

Eudora madagascariensis Castelnau

In the examination of *Eudora madagascariensis* Cast., I had been so struck by its distinctive habitus that I readily concur in Burmeister's [6] view, the species should form a separate genus; accordingly I have attempted to resurrect and validate the name *Eudora* and discovered, to my astonishment, that the name had been previously used five times, as early as 1800 in Coelenterates.

I therefore propose for *Eudora* Castelnau (1840), the name *Nagelius,* to honor a lucanologist of long standing, Herr Paul Nagel, who had materially increased our knowledge of Lucanidæ, and designate *Eudora madagascariensis* Castelnau as the type of the genus.

The genus *Nagelius* can be readily distinguished from the other genera of FIGULINI and NIGIDIINI, by being dimorphic, with mandibles without an upper, inward directed, basal tooth or horn, canthi not produced posteriorly into projecting apophyses, anterior angles of pronotum without alar laminae, etc.

Assigned to the new genus is also *Nigidius passaliformis* Benesh, readily separated from the female of *madagascariensis* by its larger size, dissimilarly denticulate mandibles, and having the disk of pronotum foveate.

[6] Translation: "this distinctive group many would define as a separate genus, as valid and justified as the separation of the genus *Cardanus* from *Figulus.*"

We also place here, with some doubt, *Nigidius nageli* Kriesche (1926), solely for its comparison with *madagascariensis*. *N. nageli* is purported to have the ocular canthus laterally strongly indented, posteriorly strongly arcuate, post-ocular apophyses much weaker, the front of head depressed and finely punctuate, elytral striation more even and lighter; the mentum less punctured, and with a button-like median flat elevation. Length: 19 mm.; greatest width (pronotum) 6 mm. (by *madagascariensis* ♀ of like development, 7 mm. plus), and recorded from Madagascar.

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Membracidae Attracted to Light [1]

BY S. W. FROST, The Pennsylvania State University

In our tests with light traps during the past eight years, treehoppers or Membracidae have been taken in comparatively small numbers, seldom one per trap per night. The numbers have been so insignificant that we have kept no definite records. They have never been reported in abundance by other work-

[1] Authorized for publication November 2, 1954 as paper No. 1917 in the journal series of the Pennsylvania Agricultural Experiment Station.

ers. Slingerland [2] took 23 specimens of *Ceresa bubalus* (F.) during August and September, 89 specimens of *Crytolobus vau* Say, and 105 specimens of *Atymna castanea* Van D., during June. Funkhouser [3] states that the only species taken with a trap lantern were *Atymna castanea* Van D., *Crytolobus vau* Say, *Ophiderma pubescens* Emms., and *Campylenchia latipes* Say and that these were taken only in rare instances.

The 5,888 Membracidae taken between June 21 and July 4 at a single light trap operated at Tamarack, Pennsylvania, during the summer of 1954 deserve special mention. A Minnesota type trap with a 60 watt white bulb was operated from June 1 to September 1 covering the period of activity of Membracids. It was hung on a black walnut tree in a grove of white oaks. A sample of 500 from the 2,080 specimens taken on June 22 reveal the following. All are oak-inhabiting species.

Membracidae taken June 22 at Tamarack, Pa.,
a sample of 500 from 2080 specimens

Species	Males	Females	Total
Atymna querci Fitch	238	2	240
Crytolobus auroreus Wood	25	0	25
Crytolobus fenestratus Fitch	88	0	88
Crytolobus vau Say	135	0	135
Ophiderma flavicephala Goding	9	0	9
Ophiderma pubescens Emms.	3	0	3
Total	498	2	500

It is evident that certain Membracids, especially those of the genera *Atymna* and *Crytolobus,* are attracted to lights. Apparently they do not fly far and are not intercepted unless the light is close to the trees upon which they normally feed. It is also very evident that males respond more freely than the females.

[2] SLINGERLAND, M. V. 1902. Trap lanterns or "moth catchers." Cornell Bulletin, 202: 209 and 228.

[3] FUNKHOUSER, W. D. 1917. Biology of the Membracidae of the Cayuga Lake Basin. Cornell Memoir, 11: 429.

Measurements of Some Parts of Some Male Bumblebees (Hymenoptera)

By Henry J. Franklin, Cranberry Station, East Wareham, Massachusetts

All the species included in the table are American, except the European *confusus* Schenck and *niveatus* Kr. from southwestern Asia. The American species are all North American, except the South American *dahlbomii* Guer. and *rubicundus* F. Sm. The first four species of the list represent the section *Odontobombus,* the next six, section *Anodontobombus,* and the remaining nine, section *Boopobombus.* These species sections, for convenience in making comparisons, are separated in the order here given by double horizontal lines.

The inclusion here of *rufocinctus* Cress. in the *Boopobombus* section leads the writer to say that he cannot agree readily with Krombein (Proc. of Ent. Soc. of Washington, Vol. 49, 1947, p. 170) in believing that *Rufocinctobombus* Frison should be considered a synonym of *Cullumanobombus* Vogt. It perhaps should rather stand, like *Bombias,* as a very unique unit of *Boopobombus,* especially because of the relative dimensions of the hind metatarsus of the male.

Those interested in the material published here and in another recent paper on bumblebees by this author [1] may find much of interest and value in the paper by Frank E. Lutz entitled "The Geographic Distribution of Bombidae (Hymenoptera), with Notes on Certain Species of Boreal America" and published as a Bulletin of the American Museum of Natural History (July, 1916).

A careful inspection of the measurements made and the ratios developed from them seems to provide material by which we may come by indirection to some interesting conclusions. Note the following:

1. *The length of the flagellum of the antennae, as measured against that of the scape,* is shown by the ratios in Column 1 of

[1] The Evolution and Distribution of American Bumblebee Kinds (Trans. Amer. Ent. Soc. LXXX, 43–51).

the table to be greatest in species of the *Odontobombus* section and in the Asiatic species *niveatus* Kr. of the *Boopobombus* section and to be least in species of the subgenus *Bombus* (species *affinis* Cress. and *terricola* Kirby) and in some species of the *Boopobombus* section.

2. The relative length of the fore wings, as measured against that of the thorax, is shown by the ratios in Column 2 to be apparently greatest in species of the *Anodontobombus* section and least in species of the *Boopobombus* section and in the species *borealis* Kirby of the *Odontobombus* section.

3. The relative width of the fore wings, as measured against the width of the thorax between the tegulae, is shown by the ratios in Column 3 to be apparently greatest in species of the *Odontobombus* and *Anodontobombus* sections, somewhat less in the species *borealis* Kirby of the sub-genus *Subterraneobombus*, and much less in all species of the *Boopobombus* section.

Though the mathematics used here may leave something to be desired, it is believed that their results give some idea of the real situations involved.

Summary

Putting together some of the different items revealed above, we find the following matters especially interesting:

I. *Antennal measurements.* The primitive antennae (especially the primitive flagellum) of male bumblebees probably were long, as in the *Odontobombus* section of today. We probably, therefore, should regard the short antennae of such male bees as those of the *Bombus* and *Bombias* subgenera as radical departures from the primitive form. The *Boopobombus* form, in its New World development, has apparently appeared only in species with males having more or less shortened antennae. The Asian *B. Sibiricobombus niveatus* Kr., however, evidently is a case of this development in a species with long male antennae and the writer has seen a second Asian species with long antennae (from Bucharei, Turkestan, 12,500–13,000 feet, and identified by A. S. Skorikov as *B. regeli* F. Mor.) showing this evolution.

II. Proportional *dimensions* of the *fore wings:*

(a) Longest in *Anodontobombus* section.
Widest in *Anodontobombus* and *Odontobombus* sections.

(b) Shortest in *Boopobombus* section.
Narrowest in *Boopobombus* section.

(c) All this seems to show that males of species of the *Anodontobombus* section have a proportionally greater wing area than have those of most other male bumblebees. This suggests that these bees fly with a relatively slow wing movement.

		Column 1			Column 2			Column 3		
		Antennae			Fore Wing and Thorax			Fore Wing and Thorax		
Species Measured	No. of Specimens measured and averaged	Length of Flagellum (1)	Length of Scape (2)	Ratio (1) to (2)	Length of Fore wing (1)	Length of Thorax (2)	Ratio (1) to (2)	Greatest width of Fore Wing (1)	Distance between tegulae (2)	Ratio (1) to (2)
BOREALIS	6	6.3	1.62	3.88	12.75	6.1	2.09	4.56	4.75	0.96
americanorum	6	7.8	1.86	4.20	16.42	6.6	2.49	5.57	4.78	1.17
fervidus	6	6.4	1.80	3.57	14.20	6.0	2.37	4.89	4.56	1.07
dahlbomii	2	7.5	1.75	4.29	16.50	6.7	2.46	5.35	4.91	1.09
AFFINIS	6	4.4	1.80	2.44	14.75	5.2	2.84	4.80	4.25	1.13
terricola	9	4.3	1.90	2.26	13.20	5.0	2.64	4.29	4.14	1.04
impatiens	6	4.7	1.67	2.81	12.45	4.5	2.77	4.00	4.00	1.00
vagans	6	4.9	1.56	3.14	11.33	4.3	2.63	3.50	3.28	1.07
perplexus	6	4.8	1.60	3.00	12.42	4.6	2.70	4.25	3.75	1.13
kirbyellus	1	5.7	1.75	3.26	14.00	6.0	2.33	4.98	4.50	1.11
NIVEATUS	2	6.2	1.50	4.16	12.25	6.0	2.04	4.00	5.00	0.80
nevadensis	3	4.1	1.71	2.40	14.33	7.2	1.99	4.66	5.80	0.80
fraternus	4	6.3	2.5	2.52	17.75	7.9	2.25	5.85	6.50	0.90
separatus	6	5.6	1.8	3.11	14.08	6.5	2.17	4.60	5.75	0.80
morrisoni	1	6.0	2.0	3.00	17.00	7.5	2.27	5.33	6.00	0.89
crotchii	1	-	-	3.00	15.00	6.7	2.24	4.75	5.50	0.86
rufocinctus	4	4.3	1.50	2.87	11.67	5.5	2.12	3.92	4.62	0.85
rubicundus	1	4.5	1.67	2.69	14.00	7.0	2.00	4.50	6.00	0.75
confusus	2	3.6	1.50	2.40	12.25	6.0	2.04	4.00	5.50	0.73

The above averages and ratios are necessarily rough, the measurements having been made with a hand lens and hand scale.

The male bees with the shortest and narrowest wings (*Boopobombus*), with their smaller wing area, should, on the other hand, be expected to weave their wings more rapidly in flight. This view seems to be supported by field observations. See here Trans. Amer. Ent. Soc., LXXX, p. 46, 1954.

I wish to thank Dr. Herbert H. Ross of the Illinois Natural History Survey for the loan of some specimens helpful in the preparation of this paper. I also received much help from C. F. W. Muesbeck and from Karl V. Krombein in the study of specimens in the United States National Museum.

Forelifidis M. R. Smith a Synonym (Hymenoptera: Formicidae)

By WILLIAM L. BROWN, JR., Museum of Comparative Zoology, Harvard University

Dr. M. R. Smith has recently (1954, Bull. Brooklyn Ent. Soc. 49: 17) proposed the new name *Forelifidis* for the preoccupied *Martia* Forel (*nec* Ragonot). In so doing, he has overlooked the prior name *Oxyepoecus* Santschi (1926, Folia Myrmec. Termit. 1: 6), with the genotype *Oxyepoecus bruchi* Santschi, 1926 (*loc. cit.*). *O. bruchi* is the *Martia bruchi* of authors (see Kusnezov, 1952, Acta Zool. Lilloana 10: 717–722 for references to *Martia* Forel). The name *Oxyepoecus* Santschi is reinstated for *Martia* Forel *et auct.* (*nec* Ragonot), and *Forelifidis* M. R. Smith is its **new synonym.**

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Due to a clerical error duplicate copies of the JANUARY issue of Volume 66 (1955) of ENTOMOLOGICAL NEWS were sent to a number of subscribers, some of whom as yet have not renewed their subscriptions for the current year. If you are one of this group and intend to renew your subscription we will refund the amount of postage if you will kindly return the extra copy to The American Entomological Society, 1900 Race Street, Philadelphia, Pa.

An Annotated List of Tabanidae Collected in Kentucky (Diptera)

By Lee H. Townsend, College of Agriculture and Home Economics, University of Kentucky, Lexington, Kentucky

The specimens on which this list is based are in the insect collection of the Department of Entomology and Botany, Kentucky Agricultural Experiment Station, Lexington. All specimens have been determined by either Dr. C. B. Philip or Dr. Alan Stone. No records have been taken from the literature. The majority of the records are from Lexington since the Tabanidae have not been consistently collected over the state. Systematic collecting will no doubt produce many species not represented in this list.

In most instances the name of the collector when known has been given. Initials have been used for three collectors as follows: B. F. Q. = B. F. Quisenberry, who was formerly Assistant Entomologist in the Experiment Station; P. O. R. = P. O. Ritcher, formerly an Entomologist in the Experiment Station; and L. H. T. = Lee H. Townsend.

The arrangement follows Philip's (1947, 1950) catalog of the family.

Goniops chrysocoma (Osten Sacken). Pineville, June 17, 1892 (H. Garman), 1 ♂ along Straight Creek.

Chrysops aestuans van der Wulp. Calvert City, May 12, 1948 (P. O. R.), 1 ♀; Sinai, May 19, 1948, 1 ♀.

C. callida Osten Sacken. Lexington, July 1, 1930 (Eugene Simpson), 1 ♀. B. F. Q. reared 4 ♂♂ and 10 ♀♀ during the summers of 1950 and 1951 from larvae collected in Clark County. The larvae were taken at the border of a small farm pond and were numerous. On May 14, 1951 pupation was in progress. A few pupal skins were found in semi-dry soil one to one and a half feet from the water's edge. Pupae were also found in saturated soil. The pupal period varied from 5 to 8 days with an average of 6 days. For all available adults the date of appearance varies from May 28 to July 1.

C. flavida Wiedemann. Caneyville, June 18, 1945 (P. O. R.), 1 ♀. B. F. Q. reared 5 ♂♂ and 2 ♀♀ in 1951 from larvae collected in Clark County. Larvae were taken from mud along the shore of a farm pond. The pupal period varied from 5 to 9 days with an average of 7 days.

C. geminata subsp. **impuncta** Kröber. Pineville, July 17, 1912 (H. Garman). 1 ♀; Natural Bridge, June 22, 1913 (H. Garman), 1 ♀.

C. moecha Osten Sacken. Natural Bridge, June 21, 1912 (H. Garman), 1 ♀.

C. nigra Macquart. Lexington, May 7, 1948 (L. H. T.), 1 ♀; May 14, 1951 (B. F. Q.), 2 ♀♀; May 19, 1944 (H. Tilson), 1 ♀, May 21, 1951 (B. F. Q.), 5 ♀♀; May 24, 1947 (L. H. T.), 1 ♀; June 7, 1904, 1 ♀. Science Hill, May 16, 1948, 1 ♀; Hogue, May 18, 1947, 1 ♀; Midway, May 29, 1933 (S. J. Anderson), 2 ♀♀.

C. pikei Whitney. Rabbittown, June 24, 1949 (B. F. Q.), 1 ♀; Lexington, June 16, 1950 (B. F. Q.), 1 ♂.

C. separata Hine. Grayson County, April 27, 1950, 1 ♀.

C. striata Osten Sacken. Caneyville, June 18, 1945 (P.O.R.), 1 ♂.

C. univittata Macquart. Cumberland Falls State Park, June 26, 1945 (P. O. R. & L. H. T.), 1 ♂.

C. vittata Wiedemann. Lexington, October 1, 1904, 1 ♀.

C. wiedemanni Kröber. Lexington, June 8, 1950 (B. F. Q.), 1 ♂ (reared); July 24, 1894, 2 ♀♀; July 28, 1894; 1 ♂; August 22, 1950, 1 ♀. Midland, July 21, 1892, 1 ♀; Natural Bridge, July 29, 1916, 1 ♀.

Hamatabanus carolinensis (Macquart). Lexington, July 22, 1892 (H. Garman), 1 ♀; Williamsburg, May 17, 1952 (L. H. T.), 1 ♀.

Leucotabanus annulatus (Say). Lexington, August 5, 1945 (L. H. T.), 1 ♀.

Tabanus abdominalis Fabricius. Mt. Olivet, October 10, 1937, 1 ♀.

T. americanus Forster. Dingus, September 5, 1948, 1 ♀; Lexington, October 17, 1949, 1 ♀.

T. atratus Fabricius. Numerous specimens (♂♂ and ♀♀) collected at California, Greensburg, Hickman, Mason County, Owensboro, and Lexington. The dates of collection vary from May 11 to August 29. In addition to being on dairy cows,

specimens were collected on rotten apples, at sugar, and at light. B. F. Q. reared adults (1 ♂ and 6 ♀♀) from larvae collected in Clark County. The larvae were taken from moist soil along the shore of farm ponds. The pupal period varied from 12 to 21 days with an average of 16 days.

This species is very common and ranks next to *sulcifrons* in number of individuals collected. It is commonly known as the black horsefly.

T. calens Linne. California, August 9, 1951 (B. F. Q.), 3 ♀♀ on dairy cows, and August 19, 1950 (B. F. Q.), 2 ♀♀ on horse; King's Mountain, August 10, 1897, 1 ♀; Peewee Valley, August 11, 1950 (B. F. Q.), 1 ♀ on hog; Tyrone, August 25, 1892, 1 ♀; Hickman, August 29, 1913 (H. H. Jewett), 1 ♀; Dingus, October 1, 1948, 1 ♀; Frankfort, October 1, 1949, 1 ♀; Lexington, October 7, 1945 (L. H. T.), 1 ♀.

This is one of the largest of the Nearctic tabanids. Until recently it has been identified as T. *giganteus* Degeer. Philip (1952) presented evidence and concluded that *giganteus* is a synonym of *calens*. Under the former name Tashiro and Schwardt (1953) present notes on its biology and describe characters for the separation of the larvae of this species from those of *sulcifrons* Macquart.

T. difficilis Wiedemann. Knox County, May 17, 1947, 1 ♀; Bardstown, June 17, 1950 (B. F. Q.), 1 ♀.

T. equalis Hine. Tatum Springs, July 15, 1941 (L. H. T.), 3 ♀♀; Bardstown, June 17, 1950 (B. F. Q.), 2 ♀♀.

T. fulvulus Wiedemann. Cumberland Falls State Park, June 27, 1945 (P. O. R.) & (L. H. T.), 1 ♀.

T. fuscicostatus Hine. Greenville, June 29, 1949 (B. F. Q.), 1 ♂; Campbellsville, July 7, 1949 (B. F. Q.), 1 ♂. Both on red clover.

T. lasiophthalmus Macquart. Lexington, April 25, 1949 (L. H. T.), 1 ♀.

T. lineola Fabricius. Lexington, 1913, 1 ♀; September 4, 1916, 1 ♀; Bardstown, June 17, 1950 (B. F. Q.), 2 ♀♀; California, May 21, 1951 (B. F. Q.), 1 ♀.

Subsp. **scutellaris** Walker. Salt Lick, August 12, 1950 (B. F. Q.), 1 ♀ on horse; California, August 14, 1951 (B. F. Q.), 2 ♀♀ on dairy cow.

T. longus Osten Sacken. Elk Lick Falls, August 17, 1892 (H. Garman), 1 ♀.

T. molestus Say. Lexington, June 10, 1950 (B. F. Q.), 1 ♂; Pineville, June 16, 1892 (H. Garman), 1 ♀.

T. quinquevittatus Wiedemann. Lexington, May 28, 1947 (L. H. T.), 1 ♂; June 28, 1892, 2 ♂♂ and 7 ♀♀; July 14, 1950 (B. F. Q.), 1 ♂ and 1 ♀; July 15, 1892, 1 ♀; July 20, 1894, 1 ♂ on *Asclepias incarnata* Linne; July 21, 1946 (L. H. T.), 1 ♀; July 24, 1894, 1 ♂; July 26–28, 1894, 1 ♂ and 3 ♀♀; August 13, 1891, 1 ♂ on millet; August 15, 1928, 1 ♂; Tyrone, July 14, 1892, 1 ♀; Wilten, August 27, 1912, 1 ♀.

T. reinwardtii Wiedemann. Lexington, August 4, 1950 (B. F. Q.), 1 ♀ (reared).

T. sackeni Fairchild. Salt Lick, August 12, 1950 (B. F. Q.), 1 ♀ on dairy cow; Mayking, October 5, 1947, 1 ♀; Dix Dam, October, 1940, 1 ♀.

T. sparus subsp. **milleri** Whitney. Fleming County, June 11, 1948 (P. O. R. & L. H. T.), 1 ♀.

T. sulcifrons Macquart. This is the most common horsefly in the Lexington area and no doubt in Kentucky. The Experiment Station collection has 13 ♂♂ and 63 ♀♀. Numerous localities are represented with June 19 being the earliest date of collection and August 20 the latest. The species is most abundant during July and August.

Under the name *Tabanus exul* Osten Sacken, Garman (1910) described a serious outbreak of this fly in Henry and adjoining counties in 1910.

A recent paper which discusses the larval habitat of this species is that of Schomberg (1952).

T. trimaculatus Palisot de Beauvois. Lexington, June 5, 1950 (B. F. Q.), 1 ♀; June 7, 1908, 1 ♀; Prospect, June 9, 1943 (H. Tilson), 1 ♀. In early June, 1950, B. F. Q. reared 2 ♂♂ and 1 ♀ from larvae collected at Lexington from soggy soil near a small, shallow, spring-fed stream in a pasture. The pupal stage for these specimens varied from 7 to 5 days. These adults emerged June 3, 8, 11, 1950.

T. vittiger subsp. **schwardti** Philip. Lexington, June 30, 1941 (L. H. T.), 1 ♀; Breman, October 5, 1946, 1 ♀.

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Two New Species in the Genera Priocnemis and Priocnessus (Hymenoptera: Psammocharidae) from Mexico

By R. R. DREISBACH, Midland, Michigan

The following four specimens are apparently opposite sexes of two species and seem to be undescribed.

I am working on a photographic atlas of the genitalia and subgenital plates of the males of the Psammocharidae of North America. However, the Atlas will not include the females, so the males are described here with the females. The photos of the males will be included in the Atlas where they will be compared with the others of their genus.

Priocnessus rogersi n. sp.

Holotype male: body wholly black; head, fore coxae (other coxae in lesser degree) pronotum, sides of thorax, propodeum, and ventral segments with erect reddish black hair (sparsely placed); whole body with appressed reddish pubescence, much heavier, longer and higher colored on abdomen; from front, head longer than broad, vertex slightly arched above eyes, antennae well above clypeus, clypeus concave in middle; from side, eyes not quite reaching vertex, nearer lateral and fore ocelli visible, front barely visible above eyes, clypeus almost flat, much raised above mouth parts; mandibles short with a tooth about apical third; antennae long and slender, third joint longer than first two and slightly longer than fourth, first joint densely hairy with short stiff hair; pronotum rounded and angulate behind, about one-half length of mesonotum; propodeum sharply sloping from base to tip with long upright hair, no cross ridges;

abdomen plump, sides from first tergite to last almost parallel, no groove on second ventral segment; tegula brownish, wing veins reddish yellow, wing surface yellow; marginal cell long and narrow, it does not extend as far toward wing tip as third cubital cell which is one-half longer than the second, the third intercubital vein sloping strongly inward so that the third cell is only about two-thirds as long on marginal vein as on cubitus; basal vein in fore wings much basad of transverse vein, and in rear wings the cubitus meets the median vein beyond the attachment of the subdiscoidal vein (which is characteristic of the genus); second recurrent vein bowed outward in the middle; claws split with outer ray long and sharp, the inner ray short and blunt, aroliae large; femora with a few short hairs, tibiae well spined, the rear ones with fair-sized spines on dorsal surface which have a slightly raised flange at their base; no spines under last tarsal joints.

Length: head and thorax 6.7 mm., abdomen 8.4 mm., fore wing 10.75 mm., rear wing 9.5? mm. (wing torn), genitalia length 1.95 mm., width 1.4 mm., subgenital length 1.8 mm., width 0.88 mm.

Holotype male: near Mexico, Mexico *or* San Juan, Teotihuacan, G. O. Rogers (MCZ).

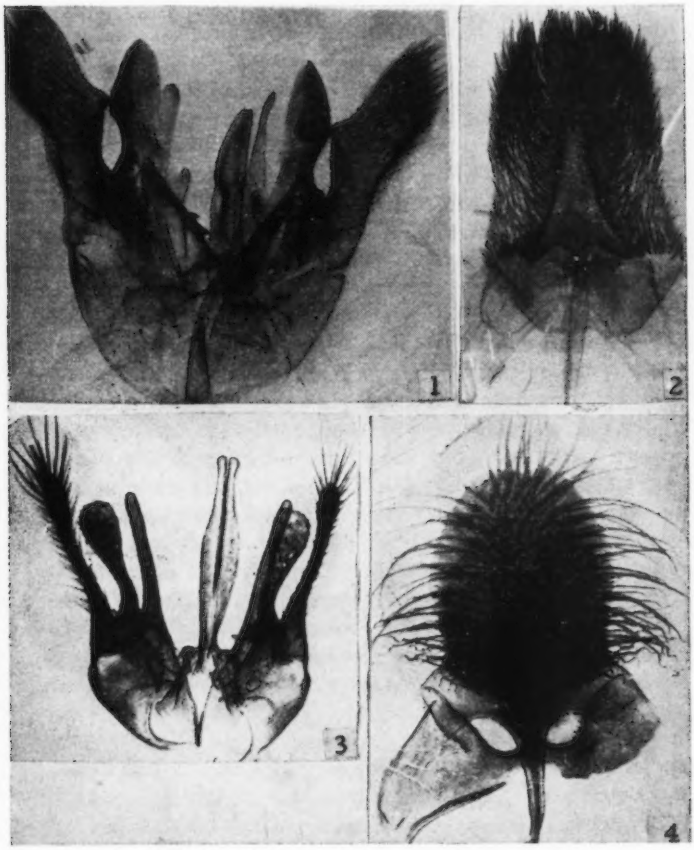
Allotype female: color as in male, with a slight reddish streak in upper posterior orbits; much more hairy than male on head, thorax, and tip of abdomen, hair much longer and denser, the pubescence black, hardly reddish; legs as in male except last tibiae have strong teeth and spines on dorsal surface and last tarsal joints all have a row of spines at each edge on ventral surface; claws all toothed near base with a sharp tooth; fore femora with long hair beneath, second femora with a few hairs above but none beneath, posterior femora bare.

Length: head and thorax 7.43 mm., abdomen 9.4 mm., fore wing 13.5 mm., rear wing 11.5 mm.

Allotype female: same data as male (MCZ).

Priocnemis mexicana n. sp.

Holotype male: body completely black; a few scattered long hairs on head, fore coxae, pronotum, and ventral segments;



1. *Priocnessus rogersi* n.sp. Genitalia × 40
2. *Priocnessus rogersi* n.sp. Subgenital plate × 35
3. *Priocenemis mexicanus* n.sp. Genitalis × 100
4. *Priocnemis mexicanus* n.sp. Subgenital plate × 100

from in front, vertex very slightly arched between eyes, front finely punctured, antennae just above clypeus, clypeus truncate in front; middle interocular distance slightly more than one-half transfacial; from side, vertex just visible above eyes, most of

front and base of antennae high above eyes, clypeus flat on dorsal surface, posterior orbits, fairly narrow about one-half as wide as eyes; antennae long and very slender, third joint about equal in length to the first two, and equal to the fourth; ocelli very small and very close together, the lateral ones about one-half as far apart as their distance to eyes; pronotum short, angulate behind, sloping, propodeum sloping its whole length, apex not much lower than base; abdomen long and slender, widest about middle of second tergite, a semicircular hair brush of long hairs near apex of sixth ventral segment; wings lemon yellow with dusky apex covering about one-half distance beyond cells; third cubital slightly longer than second and about twice as long on cubital vein as on marginal, third intercubital vein concave inward in middle and sloping forward; marginal cell long, slender, and sharply pointed at apex; basal vein in fore wings very much basad of transverse and the cubitus slightly basad of subdiscoidal vein in rear wings; tibiae with a few fine spines; longer spur of hind tibiae about three-fourths of its metatarsal joint; terminal joints of all tarsi with spines beneath; subgenital plate with very long hairs over whole surface, some longer than width of plate, sides almost parallel to apical third where it tapers to a tip one-half width of base, very similar to that of *P. minorata* Banks; genitalia with narrow parameres (much narrower than *P. minorata*), volsella much broader at apex than at base, parapenial lobes as long as volsellae, aedeagus with the two apical prongs obtuse.

Length: head and thorax 4.3 mm., abdomen 3.8 mm., fore wing 7.4 mm., rear wing 5.8 mm., genitalia length 0.87 mm., width 0.7 mm., subgenital plate length 1.0 mm., width 0.4 mm.

Holotype male: Cerro Tancitaro, Michoacan, MEXICO, alt. 12,000 ft, VII–19–40, Hoogstraal and Knight (MCZ).

Allotype female: almost identically like male, except that posterior tibiae has eight ridges on posterior surface, basal half slightly oblique.

Length: head and thorax 5.1 mm., abdomen 4.0 mm., fore wing 7.4 mm., rear wing 5.7 mm. Locality same as in male (MCZ).

Feeding Habits of Tabanidae

By R. L. BLICKLE [1]

During the past five years (1950–54) the feeding habits of Tabanidae on cattle have been observed. The various species of Chrysops and Tabanus exhibited a definite preference for certain areas on the cows, for alighting and presumably for feeding. These observations were made in conjunction with fly repellent tests which were conducted during this period.

In general the flies of the genus *Chrysops* preferred to feed on the head, neck, and withers. However, they were found to some extent on all parts of the animal's body. The *Chrysops,* when feeding, burrowed down into the hair coat and in some cases were difficult to see in a casual inspection. These flies did not excite or irritate the cows to any great extent. Two species which are similar in general appearance could be distinguished from each other by the site on which they attempted to feed. *Chrysops celer* were found on the withers and back while *C. amazon* preferred the head and face. In only one instance out of several hundred captures and many observations was *C. celer* noted on the head of an animal. In the more than fifty specimens of *C. amazon* taken all were taken from the head or face. Observations on the other species of *Chrysops* were too few to be conclusive.

The *Chrysops* were very annoying to the observer when he was in the woods surrounding the pasture and no cattle were within seventy-five yards. However, when one was collecting or observing near the cows these flies did not annoy or attempt to bite the observer—the preference for cow being much greater than for man.

Two small species of Tabanus had habits similar to the *Chrysops. T. pumilus* and *T. sparus* preferred the withers, back, and ribs. They would also burrow among the hair when attempting to feed. The burrowing probably is associated with the small size of the insects.

[1] Published with permission of the Director as Scientific Contribution No. 175 of the New Hampshire Agricultural Experiment Station.

Other members of the genus *Tabanus,* in general, preferred the following areas on the cows:

Upper side—back and loin: *Tabanus actaeon, T. atratus, T. catenatus, T. sulcifrons,* and *T. zonalis.* These moderate to large size flies would alight on the back and attempt to feed immediately. They did not buzz or hover around the cow as did the smaller horseflies.

Lower side—paunch, dewlap, udder: *T. aurilimbus, T. hinei, T. lasiophthalmus, T. quinquevittatus, T. trisiplus, T. superjumentarius,* and *T. typhus.*

Legs: T. hinei, T. lineola, and *T. nigrovittatus.*

The *Tabanus* could be separated into two groups on the basis on site preference on the cow. Some species preferred the upper areas while others the lower areas of the cow. However, the most abundant species, *T. aurilimbus, T. lineola, T. nigrovittatus, T. lasiophthalmus, T. quinquevittatus T. trispilus,* and *T. typhus,* were found to some extent on other parts of the animal. Those species which fed on the lower parts of the animals seemed to be more successful in obtaining a blood meal.

In spraying cattle with horsefly repellents the area to be treated would be determined to some extent by the species to be repelled. For instance, spraying the back of the animal would not prove to be satisfactory in the control of *T. lasiopthalmus* or *T. lineola,* whereas treating the lower side would prove effective. The use of the treadle-mist type of applicator, wherein the whole animal is treated, would prove effective irrespective of the species to be repelled.

Entomologists Needed Abroad

The UNITED STATES DEPARTMENT OF AGRICULTURE is seeking agricultural specialists, including entomologists, to represent the United States in technical assistance programs abroad. Professionally trained individuals of proven ability and years of experience, as well as having the requisite personal qualities for such service, are required.

Interested persons should submit Form 57, Application for Federal Employment (available at First-Class and Second-Class post offices), or write to Office of Personnel, U. S. Department of Agriculture, Washington 25, D. C.

Extension of Range of a Little-Known Neotropical Mantid (Orthoptera; Mantodea; Manteidae; Mellierinae)

In 1941 Dr. John W. H. Rehn described a new genus and species of mellierid mantis as *Guaraunia insolitum*,[1] from a single male taken at Quiriquire, Monagas, Venezuela. Individuals of this Neotropical subfamily (Mellierinae) are relatively infrequent in collections, and no additional record of *Guaraunia* has appeared since its original description.

There is now before me a second male of this genus and species, in the collection of the Academy of Natural Sciences of Philadelphia, taken on the Rio Branco, Rio Branco Territory, Brazil, August 30, 1924, by Dr. Joseph Bequaert. This specimen is somewhat damaged, but is clearly referable to *Guaraunia insolitum*, as direct comparison with the type, also in the Academy collection, demonstrates. The Rio Branco individual is somewhat smaller than the type, its chief dimensions as compared with the type being as follows: length of pronotum, 9.9 mm. (type, 11.5); greatest width of pronotum, 2.6 (3 mm.); length of tegmen, 26.5 (31.5); length of cephalic femur, 8.4 (10); length of caudal femur, 7.5 (8.5).

The color pattern exhibits the same elements as in the type, some of which are shown in the figures accompanying the original description, although in the Rio Branco male a few maculations are less extensive and occasionally broken into several disconnected units. The striking darkening of the crossnervures of the tegmina is as clearly indicated as in the type.

This record extends the range of the genus, and of the species, into the Amazon Valley.

JAMES A. G. REHN,
Academy of Natural Sciences of Philadelphia

[1] Novit. Zool., no. 70, p. 1, text-figs. 1–3.

The Status of Pemphredon provancheri Dalla Torre (Hymenoptera, Sphecidae)

By KARL V. KROMBEIN, United States Department of Agriculture, Washington, D. C.

The name *Pemphredon Provancheri* was proposed by Dalla Torre (Cat. Hym. 8: 359, 1897) for the species which Fox (Trans. Amer. Ent. Soc. 19: 314, 1892) assumed that Provancher (Nat. Canad. 13: 78, 1882 and Faune Ent. Canad., Hym., p. 646, 1883) had identified erroneously as *concolor* Say. Recently I was able to study in Provancher's Second Collection at the Musée de la Province at Quebec the two specimens from Cap Rouge, Quebec, upon which Provancher based his concept of *concolor* Say, and from which a lectotype of *provancheri* must be chosen. Both specimens agree with Fox's interpretation of *concolor,* and Dalla Torre's name, therefore, falls as a synonym.

I have selected as lectotype of *provancheri* the specimen which bears a yellow label, "799," and a determination label in Provancher's handwriting, "Pemphredon concolor Say." The other specimen does not bear a label of any kind, but originally stood next to the labeled specimen. I am indebted to Mr. Noel-M. Comeau, Associate Director of the Musée and Custodian of the Provancher Collection, for the information that No. 799 is recorded in Provancher's catalog as having been taken at Cap Rouge in 1881, and that this specimen was listed originally in that catalog as *maurus* Provancher, a manuscript name which was later crossed out and replaced by *concolor* Say in the catalog.

Sperry Collection Presented to the American Museum

The **John Lowell Sperry Collection** has been bequeathed to the American Museum of Natural History, New York. This constitutes the largest single collection of any kind ever given to the Museum, and consists of 165,000 moths, 16,000 butterflies, and 1,100 miscellaneous insects.

Mr. Sperry, who died a year ago in January, was an amateur lepidopterist and built up the largest known private collection of Geometridae including nearly all the 1200 species known from North America. According to Dr. MONT A. CAZIER, Chairman of the Department of Insects and Spiders, the collection is outstanding also for its excellent mounting, and will be used by Dr. FREDERICK H. RINDGE, Assistant Curator, in his current studies on the Geometridae.

Entomological Departments

Believing such material to be of interest to its readers, ENTOMOOGICAL NEWS herewith solicits articles similar to the one here presented and giving information on the organization and activities of entomologists in colleges, universities, museums, and in government and other groups.

University of Minnesota

The DEPARTMENT OF ENTOMOLOGY AND ECONOMIC ZOOLOGY includes entomology, conservation, fishery biology, and some parasitology. These laboratories are in the Institute of Agriculture on the St. Paul campus but the work is closely interwoven with that of the ZOOLOGY DEPARTMENT on the Minneapolis campus (only 4 miles away). In fact, those courses which are of general zoological interest are given under the official auspices of the Zoology Department. One of the outstanding features of the University of Minnesota is the large amount of interdepartmental cooperation (including joint appointments in several departments) which for us includes not only other biological groups but also physics, chemistry, etc. In addition, the Department is affiliated with the STATE EXPERIMENT STATION located here, and many of our research projects are sponsored by the Station. Also, although technically not affiliated with the University, the STATE ENTOMOLOGISTS' OFFICE is located in the same building and cooperates with the Department, and the LAKE STATES FOREST EXPERIMENT STATION OF THE U.S.D.A. (including entomology) has recently been moved onto the St. Paul campus.

Confining further treatment to the entomology fraction of the Department, the work offered is primarily at the graduate level.

Although we have occasionally had an undergraduate major, our general policy is that entomology is a specialization best undertaken at the graduate level following an undergraduate major in zoology, biology or chemistry. Students coming here with undergraduate majors in entomology are advised to avail themselves of the opportunity to fill out their background in zoology and botany. All students who have not had such an experience previously are advised to spend a summer at the Lake Itasca Biological Station or at one of the marine biological laboratories. In recent years there has been an average of about 30 graduate students here at all times.

The teaching staff consists of Professors C. E. MICKEL (Dept. head and taxonomy), A. A. GRANOVSKY (vectors of plant diseases and soil insects), A. C. HODSON (ecology and forest ent.), F. G. HOLDAWAY (economic ent.), A. G. RICHARDS (physiology and microscopy), and ALVAH PETERSON (immature insects, summer only); Associate Professors L. K. CUTKOMP (insecticides), and M. H. HAYDAK (apiculture); Assistant Professors T. L. AAMODT (regulatory methods, also State Entomologist), E. F. COOK (taxonomy and morphology), and A. G. PETERSON (economic ent.), and Instructor A. R. BARR (medical ent.). In addition, Dr. MARIAN A. BROOKS (physiology), Dr. H. C. CHIANG (ecology), Mr. TRUMAN CLARK (parasitology), Dr. B. A. HAWS (economic ent.), and Dr. K. W. TUCKER (economic ent.) hold positions as Research Fellows, and Dr. T. A. GOCHNAUER (bee diseases, bacteriologist) is Research Associate.

Major course offerings are: general entomology, ecology, physiology, microscopy, principles of economic entomology, legal and regulatory entomology, insecticides, medical entomology, forest entomology, apiculture, immature insects (in summer at Itasca station), and relation of insects to plant diseases. Research and thesis work is available in these subjects plus other specialties of staff members.

Twenty-two research projects in entomology are currently being sponsored by the Experiment Station, in some cases with additional research funds from outside sources. The larger of these are: corn borer research (Holdaway), legume seed production (Holdaway, Peterson, Haws and Tucker), causes of

insect abundance and outbreaks (Hodson, Holdaway, Chiang and Peterson), insect physiology (Richards and Brooks), honey bee diseases (Gochnauer), methods of bee management (Haydak), insecticide testing (Cutkomp), and the insect collection (Cook).

The departmental library contains about 9000 bound volumes plus much unbound material. This library is particularly rich in periodicals and old entomological classics. Used in combination with the large Biological-Medical Library on the Minneapolis campus, this library gives us one of the best sets of such facilities available in the midwest.

The insect collections, primarily for research purposes, contain somewhat over two million specimens. Most of these are pinned (3500 drawers) but there is a large alcoholic collection and a fair-sized collection of small insects on slides. All the insect orders are represented but the collection is particularly rich in aculeate Hymenoptera, especially Mutillidae, Diptera, Coleoptera, noctuid moths, Ephemeroptera, Plecoptera, Trichoptera, and Hemiptera, especially Miridae, Cicadellidae and aquatics. A large proportion of the material is from Minnesota, naturally, but the collection is world-wide in scope.

Greenhouse and insectary facilities are not nearly as good as we would like, but about 1000 sq. ft. of greenhouse space is available and another 1000 sq. ft. of ordinary room space used for rearing. Outstanding features of equipment are the large amount of constant-temperature cabinet space, constant-temperature work rooms, and the variety of microscopes. In addition to well-equipped laboratories for research in physiology, ecology, insecticide chemistry and action, histology, and museum taxonomy, there is a good bacteriology-virology laboratory used for the bee disease work.

In summary, training is primarily at the graduate level and emphasizes fundamentals including recognition of entomology as just a specialized part of zoology; research also emphasizes fundamentals and in addition deals with various economic problems important to Minnesota.

A. Glenn Richards

EXCHANGES

This column is intended only for wants and exchanges, not for advertisements of goods for sale or services rendered. Notices not exceeding three lines free to subscribers.

These notices are continued as long as our limited space will allow; the new ones are added at the end of the column, and, only when necessary those at the top (being longest in) are discontinued.

Cynipid and Itonidid galls—American species wanted; purchase or exchange for British species. Fresh or dried. D. Leatherdale, F.R.E.S., Old Woodstock, Oxford, England.

Wanted—Reprints or papers concerning insects taken in Alaska for inclusion in list of Alaskan insects. R. H. Washburn, Alaska Experiment Station, Palmer, Alaska.

Conopidae of the World wanted. Will pay 10¢ to $1.00 for pinned and labelled specimens. S. Camras, 4407 N. Milwaukee Ave., Chicago 30, Illinois.

Anisoptera—Nearctic sp. wanted for exchange, espec. Ophiog., Arigom., Aeschna, Neurocor., Somatoc., Cordulia, Dorocor., Leucor. R. D. Cuyler, Dept. of Entomology, N. C. State College, Raleigh, N. C.

Bembicini and Stizini (Hym., Sphec.) of New World wanted for revis. study. Will return upon request or at end of project. James E. Gillaspy, Dept. of Zoology, Univ. Texas, Austin 12, Texas.

Agapema galbina. Will exchange cocoons of this moth for nature books. E. Frizzell, Route 4, Box 96, San Benito, Texas.

Wanted—Data on exact location of colonies of *Epibembex* (olim *Bembix*) (Hymenoptera), any species, any part of country, for biological studies. Howard E. Evans, Dept. Entomology, Cornell Univ., Ithaca, N. Y.

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